

SCIENCE

And Technology Program



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Current water quality information is not available for Canyon Ferry Reservoir. A proposed Resource Management Plan, as well as daily reservoir operations, requires that limnological data be collected that reflect the conditions in the reservoir so that impacts to resources can be predicted and avoided or mitigated.

A meeting was held in Helena, Montana, to discuss concerns and data needs on the upper Missouri River. The meeting was attended by State, Reclamation, FWS, Montana Power, and private consultant personnel. There is general concern about low dissolved oxygen and its effect on the fishery below Canyon Ferry Dam and continuing through Hauser and Holter Reservoirs. Due to the outcome of this meeting, there was a change in the direction of our study. We continued to collect basic limnological data at the six established sampling sites in Canyon Ferry Reservoir. The planned sampling for metals, bacteria, and petroleum in selected bays was eliminated from the study because it was felt that samples collected last year were sufficient to characterize the Reservoir. The study was expanded in 1999 to include the collection of limnological data in Hauser Reservoir, as well as hydroacoustic fish location work on Canyon Ferry and Hauser Reservoirs. This expansion will help to fill in some data gaps to help resolve the low dissolved oxygen concerns.

Provide a broad general descriptive overview of the water quality of Canyon Ferry Reservoir, Montana, for the Montana Area Office. Describe general seasonal limnological characteristics of Canyon Ferry and Hauser Reservoirs with respect to temperature, dissolved oxygen, pH, conductivity, secchi depth, nutrients, zooplankton, phytoplankton, chlorophyll, and productivity. Investigate the low dissolved oxygen concentrations that have been reported below Hauser Dam and determine the contribution of Canyon Ferry reservoir operations. Suggest possible operational changes which would alleviate the problem.

There appeared to be a correlation between Canyon Ferry dissolved oxygen concentrations in the lower depths and the dissolved oxygen concentrations in upper Hauser Reservoir, below Canyon Ferry Dam. The limnological data, as well as the hydroacoustic fishery data, will be analyzed in FY 2000 to determine specific impacts.

A spill through the Canyon Ferry radial gates was performed September 10-13, 1999, to observe the effects of this proposed remedial action. Preliminary results indicate that this would be a feasible corrective action.

Partners who participated in the project: Montana State Fish, Wildlife, and Parks, USFWS, Montana Power, private consultants, and Reclamation, coordinated efforts on each independent study.